

Using Progressions to Understand the Common Core Fraction Standards

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MaThink 2014

March 1, 2014

Ice Breaker

➤ Arrange yourselves in a circle in order of birthday

➤ **Month** and **Day**



Food for thought...

➤ Does anyone share a birthday?

➤ What is the probability that at least two people would share a birthday in a group this size?

Our Focus

Through activities and discussion, participants will gain a better understanding of the Common Core Progressions in general. More specifically, participants will delve into the progressions for grades 3-5 on fractions and grades 6-7 on ratio and proportional reasoning to see the purpose of the progressions and how they will be of great use to a teacher as she/he plans lessons. In addition, uses for a number line as a tool when teaching these concepts will be discussed. Questions from the participants regarding the CC Progressions will be answered and resources highlighted.

Progressions

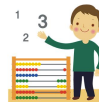
The Common Core State Standards in mathematics were built on progressions, that is, narrative documents describing the progression of a topic across a number of grade levels, informed both by research on children's cognitive development and by the logical structure of mathematics. These documents trace major concepts through the grade levels. They explain which standards build upon one another, point out cognitive difficulties and pedagogical solutions, and give more detail on particularly knotty areas of the mathematics.

From: <http://ime.math.arizona.edu/progressions/>



A Use for Number Lines

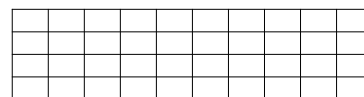
➤ How could we use a number line to solve the previous problem?



Another problem.

➤ Consider the 4 by 10 grid below. Shade any 6 small rectangles.

➤ Use the picture to find the percent of the grid that is shaded.



Some possible solutions:

- ### First Configuration



Second Configuration

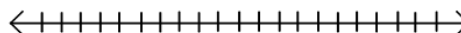


From: *Implementing Standards-based Mathematics Instruction: A Casebook for Professional Development*, pp. 37-63



How can a number line be used?

First Configuration



From: *Implementing Standards-based Mathematics Instruction: A Casebook for Professional Development*, pp. 37-63



Yellow and blue paint were mixed in a ratio of 5 to 3 to make green paint. After 14 liters of blue paint were added, the amount of yellow and blue paint in the mixture was equal. How much green paint was in the mixture at first?

From: Progression 6-7, Ratios and Proportional Reasoning, pg 2



$\frac{1}{2}$ is always greater than $\frac{1}{4}$.

Create a visual to defend your position.

- 7 Common Core Tools: <http://commoncoretools.me/tools/>
- 7 Progression on Number and Operations – Fractions, 3-5: http://commoncoretools.me/wp-content/uploads/2011/08/ccss_progression_nf_35_2013_09_19.pdf
- 7 Progression on Ratios and Proportional Reasoning, 6-7: http://commoncoretools.files.wordpress.com/2012/02/ccss_progression_rp_67_2011_11_12_corrected.pdf
- 7 Dan Meyer's Three Acts: <http://threeacts.mrmeyer.com/>



- Thank you for attending.
- If you would like to contact us, our emails are:
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